Mobile Accessibility for Android™

Quick Start Guide for V1.5

Published by:

Code Factory, S.L.
Making Mobile Phones Accessible to the Blind and Visually Impaired.
Moving Accessibility Forward!

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The following abbreviations are used in this document:

- MA: Mobile Accessibility
- VK: Virtual Keyboard
- ATNS: As the name suggests. This is used for settings whose name elaborates its functionality without requiring additional explanation.

1. Minimum Requirements

We recommend all devices that meet the following requirements:

- Running Android 2.1 or higher (2.2 is recommended and is required in order to use speech recognition).
- Connected to a 3G GSM or CDMA network and synchronized with a Google account.
- Navigation aid such as direction pad or trackball.
- Physical menu, home and back keys are recommended, but if the user is comfortable with touch sensitive buttons then it is OK to have a device with touch sensitive buttons.
- A built-in hardware keyboard is recommended to enable faster typing. Although the VK is made available for touch screen typing, a hardware keyboard is generally faster. A hardware keyboard is also required for dialing numbers while on an active call.

2. Installation / Uninstallation

Using the Market

We expect users to do this with sighted assistance, but if the device has a screen reader like Spiel or TalkBack running on the device, then the user can do this independently. Note that running multiple versions of MA is not recommended. In case you have a demo version installed and want to install the paid version, you must first uninstall the demo version.

- Configure an Internet connection either with a Wi-Fi network or a data connection with a cellular network. Check the device manual for steps or contact your service provider.
- Open the Market application. Note that on opening the Market application for the first time you may be required to enter your Google email address to configure the mobile device with the Market.
- Navigate to and activate the search button by using the arrow keys and enter.
- Type “Code Factory” and hit enter to start the search.
- In the results, navigate to the version and language of MA that you would like to install. The current options are: MA US English Demo, MA UK English Demo, MA US English and MA UK English. Select the install / purchase button.
- Selecting the paid version (non-demo) will require making payments using Google checkout with credit / debit cards. Please follow the on-screen instructions.
- In the permission screen, select the OK button to let the market application download and install MA.
- Check the system notification window for installation completion status.
- If you want MA to update automatically, make sure to check “Allow automatic updating” from Market > My Apps > MA.

Using the Web

After configuring the Market application with your Google email address, follow the steps below. Note that if the Market account is not configured, it is required to open the Market application from the phone and configure it:

- Visit http://market.android.com
- Login with the email credentials configured with the phone Market application.
- Navigate to the search edit box and search for “Code Factory”.
- In the results, navigate to the version and language of MA that you would like to install. The current options are: MA US English Demo, MA UK English Demo, MA US English and MA UK English. Select the install / purchase button.
- Selecting the paid version (non-demo) will require making payments using Google checkout with credit / debit cards. Please follow the on-screen instructions.
- If the phone has an active internet connection, MA will be downloaded and installed automatically on the phone. Check the system notification for completion status.

Uninstalling MA

On the phone, open the phone settings by using either the default home screen or MA Apps. Then navigate to Applications > Manage Application > MA and activate the uninstall button. Confirm by selecting the OK button. MA will be uninstalled.

3. Enabling the MA Screen Reader

On the phone, open phone settings by using either the default home screen or MA Apps and navigate to Accessibility. Check "Accessibility" and "MA" and select the OK button in the resulting permission dialog. This will enable the MA screen reader outside the MA Suite.

4. Navigation Gestures

You can use the following navigation gestures inside MA and on all screens and dialogs.

- Tap anywhere on the screen: MA reads the tapped icon or text and focus moves to the control.
- Tap and hold: wait for the vibration feedback and start moving your finger on the screen. MA will read the control under the finger.
- Double tap or enter: activate control / toggle check boxes.
- Slide / arrow down: move to the next control or list item.
- Slide / arrow up: move to the previous control or list item.
- Slide / arrow right: jump a few list items forward.
- Slide / arrow left: jump a few list items backward.
- Slide up with 2 fingers: move to top.
- Slide down with 2 fingers: move to bottom.
- Slide left with 2 fingers: simulate back key.
- Triple tap or menu key: activate quick menu.
- Long press menu key: toggle review mode on list items. Use slide or arrow left / right to review.

5. Virtual Keyboard

Setup

- On the phone, open phone settings by using either the default home screen or MA Apps. Then navigate to language and keyboard or locale and text.
- Check the option MA.
- Navigate to MA > Settings > Text Input > VK > Advanced > Select System Input Method.
- Check MA in the list.

Using the VK

i. Inside MA

Use long press of the volume up key to toggle the VK on or off. The following shortcuts can then be used:

- Volume up key or long press of the symbol key on the VK: toggle keyboard layout between upper, lower, numeric and symbol layouts.
- Volume down key or long press of the space key on the VK: toggle text review mode between character, word, sentence and paragraph. Use slide or arrow left / right to review.

ii. Outside MA

Use the long press of the menu key to activate the VK. Use the back key to close the VK. Note that the VK can only be used when the built-in keyboard is closed. The VK activates automatically when your focus lands on edit controls. When the VK is active you can use the following gestures:

- Volume up key or long press of the symbol key on the VK: toggle keyboard layout between upper, lower, numeric and symbol layouts.
- Volume down key or long press of the space key on the VK: toggle text review mode between character, word, sentence and paragraph. Use slide or arrow left / right to review.
- Slide or arrow up / down: navigate to previous / next control.

Settings

Open MA > Settings > Text input > VK.

- Always Landscape: toggle the VK between landscape and portrait orientation. In landscape orientation, the entire screen is covered by the VK, while in portrait orientation it only covers the bottom half of the screen.
- Use Volume Keys to Change Settings: ATNS.
- Display Keyboard on the Screen: ATNS. Only applicable inside the MA suite.
- Show Numeric Row: ATNS. For lower case and upper case layouts.
- Use Dynamic Keyboard: toggle between dynamic and static keyboard. When in dynamic keyboard mode, where ever you place your finger on the screen, it focus on the character H or number 5 or number 6 depending on the layout in

use and then you can move your finger relatively to find the desired key.

- Advanced > Set System Input Method: ATNS.
- Discarding a selection: if you are moving your finger on the VK and wish to discard the current selection (since lifting your finger would type the character) you just need to swipe in any direction quickly to discard it.

6. Speech Recognition

Using Speech Recognition inside MA

- Press and hold the volume down key and wait for vibration feedback to start speaking.
- When you finish speaking, release the volume key.
- MA will announce the first result after processing the recording.
- Slide or arrow up / down to read the list of results.
- Use the volume up key to review the currently selected result by words.
- Volume down or enter or double tap to select the result.

Using Speech Recognition outside MA

- Activate the VK using a long press of the menu key.
- Press and hold the volume down key. The rest of the process is the same as discussed above (when inside MA).

7. MA Home Screen and Setting / Clearing Defaults

- To set MA as the default home screen, press the home key, navigate to and check the “Use by default for this action” check box and select MA. Doing this will open the MA window automatically when the phone starts and when pressing the home key the next time.
- To clear out MA as the default home screen, open MA > Apps > Settings > Applications > Manage Application > MA and select the clear defaults button. This will enable the list of home screens when pressing the home key and you can then select your desired home screen.

8. Unlocking the Device

To unlock the device, you must first press the power key and then draw the unlock gesture on the screen. To learn your device’s unlock gesture, you may need sighted assistance to learn the gesture and its position. On most devices, you can swipe the screen from bottom left to bottom right to unlock but it may differ with phone models and Android versions.

9. Working with Home, Back, Menu and Search Keys

You may wish to get sighted assistance to identify the home, back, menu and search keys on the device, or alternatively you can learn by playing around with the different keys found on the phone. The following functions are performed with the keys.

- Home: presents the list of home screens (including MA) to switch between, or if a home screen is set as default, it is launched.
- Back: used to move back a level in the control window. In simple terms it is used to close or exit the current window or menu.
- Menu: as the name suggests, it opens the menu of the currently focused application window to change settings or list additional options.
- Search: open the search window to find content on the phone or on the internet. You can use this window to find applications on the phone or even to search contacts or SMSs.

10. Phone Application

Use the dial number button to start dialing a phone number (top of screen) or use the call contact button (second button from top) to call a contact. Multiple-phone-number contacts will present a list of number to be dialed.
Browse the list to review the call log. Use the quick menu or double tap on the list item for more options like filtering call log, sending SMS etc.

Dialing

- In the phone application, there are several ways to dial a number. You can directly tap the phone number keys, or move your finger to find the key and lift it to dial, or use slide / arrow keys to find the number and double tap to enter dial, or enter the number using the phone’s built-in keypad, or alternatively use speech recognition to enter numbers.
- To delete the last entered number, either use the back button at the top right of the screen or use the back key on

phone's built-in keyboard (not the one that is on the front of the device).

- On the top left of the screen is the edit box. Slide to it or tap it to gain focus and use slide or arrow left / right to review numbers.
- To dial a number, slide or tap to the dial button and double tap or enter to initiate a call.

Reading Caller ID Information

- Double tap on the screen to read caller ID information.

Note: if the system call screen is enabled, this will not work and you may need to silence the ring tone using the phone's default gesture to listen to caller ID information. This method will also work in a call waiting situation when you get a second call notification while on an active call.

Answering, Rejecting and Disconnecting Incoming Calls and Call Waiting Calls

- Volume up or slide up (covering 70% of the screen) to answer the incoming call.
- Volume down or slide down (covering 70% of the screen) to reject the incoming call.
- Double tap to toggle between speaker and earpiece mode.

Toggling MA and System Call Screen to Dial a Number while on an Active Call

- To switch to the system call screen from the MA call screen, press the menu key. This is required to dial a number while on an active call, for example to interact with the voice mail system, IVRS etc. On some phones you may need to press the keypad button on the screen after switching to the system call screen in order to activate the phone keypad. Use the on-screen keypad to enter numbers or use the phone's built-in keyboard.
- To switch back to the MA call screen, press the home key. If a list of available home screens is presented, select MA.
- As of now there is no way to enter a number while on an active call with the MA call screen due to the framework limitations so it is essential to activate the system call screen.

Settings

Go to MA > Settings for phone application settings. These are listed here:

- Incoming Call Ringtone: ATNS.
- Notification Sound: ATNS.
- Sound Profile: ATNS.
- Vibrate when Receiving a Call: ATNS.
- Vibrate on Notifications: ATNS.
- Advanced > Enable Volume Keys to Answer / Reject Calls: ATNS. This option will not work if the system call screen is in use.
- Advanced > Use System Call Screens: toggle between the use of system and MA call screens. Note that the previously mentioned gestures related to calling will only work if this option is disabled.
- Note that, while on an active call, using the volume keys will modify the call volume if the phone is placed near your ears so that the proximity sensor is activated.

11. Speech Settings

MA > Settings > Speech Settings

- Rate: ATNS.
- Pitch: ATNS.
- Use System Voice: enable system default TTS to be used with Mobile Accessibility. To configure system default TTS check phone settings > Voice input and output > Text to speech settings.
- Punctuation Verbosity: ATNS.
- Indicate Capitalization: ATNS. Uses a higher pitch.
- Spell Phonetically: ATNS. Takes effect both when typing and reviewing text.
- Turn off list numbering: ATNS.
- Eliminate Character Repeats: ATNS. For example MA will read 5 consecutive dots as "dot dot dot" (three times).
- Number Processing: ATNS.

12. Text Input Settings

MA > Settings > Text Input

- Keyboard Echo: ATNS.

- Speak Deleted Character: ATNS.
- Speak Line Number: this option enables MA to announce the line numbers available in an edit field and also as the cursor moves.
- Secret Mode: list verbosity choices for password fields.
- Virtual Keyboard: explained above in the Virtual Keyboard section.

13. Audio and Vibration Settings

MA > Settings > Audio and Vibration

- Sound Feedback for Navigation: enable MA sounds to indicate navigation to the next control or list item.
- Vibration Feedback for Navigation: ATNS.
- Stop speech when tapping the proximity sensor: ATNS. To locate the sensor on the phone, consult the phone manual.

14. Screen Reader Settings

MA > Settings > Screen Reader

- Notify when leaving Mobile Accessibility: ATNS. When using MA, this option opens a notification when moving to an application or window outside the MA Suite. For example, when opening an application using the apps menu.
- Speak System Notifications: ATNS. Reads only the notifications that are updated on the system notification window.

15. Quick Menu

The MA quick menu lists all the functions or settings options for the currently selected application or window. It has the following general options:

- Date and Time: ATNS, MA reads the time and date of the device.
- Phone Status: MA reads the phone status including network, battery, notifications etc.
- Show System Notifications Screen: ATNS. This option will only be available if the MA screen reader is enabled.

16. Web Browser

The web application can be used for browser actions outside Mobile Accessibility. For instance, when you click a link in an SMS or in an email, you are presented with a list of web browser instances, one can select Web to process the action. Note, in the list of browser action, select Default for this action check box to make Mobile Accessibility web browser default application to process web action requests. To clear the defaults, go to Phone Settings > Mobile Accessibility and activate the clear defaults button.

Navigation Keystrokes and Working with Forms Controls

- Slide or arrow up / down: read previous / next line.
- Slide or arrow left / right: jump to previous / next web element according to jump mode.
- Enter or double tap: activate web element. When in an edit box, this opens a box to type and read text. When in a list or combo box, this opens the list of choices of the control for navigation and selection.
- When in an edit box: after opening, long press the menu key to set the review mode and use the left / right keys to review the text. For more reading options use the quick menu.
- Tap, hold and move the finger to review the web page elements on the screen.

Jump Modes

- Long press the menu key to set jump modes to character, word, links, heading, forms etc.
- Alternatively, use quick menu > Navigation options to set jump modes.

Quick Menu Address Bar

- Opening a web page: type or use speech recognition to enter a web page address to open. Note that “www.” is already entered in the box for your convenience.
- Adding a bookmark: open a page, open the address bar window, navigate to it and activate “Add to Favorites”.
- Clear Favorites: delete all bookmarked pages.
- Use the list to open a bookmarked webpage.

Quick menu > Browser Functions

- Search the Current Page: ATNS, type text in an edit box and activate the OK button. Use left / right arrow or slides to

find previous / next occurrences.

- Go Home: opens the default browser page.
- Stop: stops downloading the page. Alternatively you can use the back key.
- Back: navigate to previously opened page.
- Forward: ATNS.
- Reload: ATNS. Similar to refresh on a desktop browser.

Quick Menu > Navigation: ATNS

Quick Menu > Reading: ATNS

Quick Menu > Settings

Most options are ATNS. Other options are discussed here:

- Home Page: ATNS. Open to edit the page's address.
- Remember Last Visited Web: if enabled, when starting up, the browser loads the same page that was open in the last browsing session.
- Reset Navigation on Download: if enabled, sets the navigation (jump mode) to links when opening a link. In not enabled, the navigation mode is kept the same when opening a new page.
- Touch Screen works as Arrow Keys: this option enables the use of slides to navigate web page elements. If disabled, the option will let you slide on the screen to scroll the page horizontally or vertically and MA will announce the page percentage. This is useful for a person with low vision.

17. Email

Setting up Email

Opening the email application for the first time requires you to enter your email account credentials. Go to Quick menu > Settings > Gmail account for the email address and Password for the password information. After entering the information, exit the application and re-open it.

Navigation and Account Structure

With your account configured correctly, opening the application will present the Google mail mobile folder. Open the gmail folder to view a complete list of account folders. Use the quick menu to explore all options related to email such as compose, reply, forward etc. Reading and navigation options similar to those available for web pages are available in the quick menu for open messages.

Settings

- Gmail Account: ATNS.
- Password: ATNS.
- Download messages in groups of: sets the number of messages to retrieve from the server when downloading messages.
- Email Check Frequency: ATNS.

18. Contacts

Filtering Contacts

Opening the contacts application lists all the phone contacts in alphabetical order. To filter or find a contact, navigate to or tap the top edit box and start typing. You can also start typing anywhere in the contact list. As soon as you start typing, MA reads the first result and also announces the number of matching results.

Creating and Editing Contacts

Use the quick menu > Create contact option to create a new contact. This screen is similar to the edit contact screen.

- You must enter a first or last name.
- To add a phone number, you must use "add phone number" and to add email or postal address, you must use the "add email / address" button. Note that not activating the button will not show the related edit field.
- By activating any of the add buttons, focus jumps to the edit box of the field.
- Slide up from the edit box to locate the type button, and activate it to choose a different type. The type button represents, for example, the home phone or home email etc.
- Slide down to locate the remove button. This removes the last focused email / phone number / postal address.
- To enter the postal address, double tap or enter to open a sub-form consisting of fields such as City, ZIP / Postal code

etc.

- When you have finished, make sure to activate the save changes button.

19. SMS

- Open the SMS application to list all the message conversations. Open a specific element to view all messages of the conversation.
- Use the quick menu to use SMS related options such as reply, forward etc.
- Use the "Compose new message" button to open a new message window. Slide or arrow up / down to browse all the fields.

20. Alarms

- Open the alarm application to list all the alarms currently set. The create alarm button is at the top of the list.
- Touch and explore the top of the screen to read the time.
- In the minute / hour edit box, you can enter the value directly or can enter / double tap to open a list and select a value.
- When the alarm rings, double tap the screen to read the alarm description.
- When the alarm rings, slide or volume up to snooze the alarm for 10 minutes. Note that after snoozing the alarm you can quickly slide down to cancel the snooze.
- When the alarm rings, slide or volume down to stop the alarm.

21. Calendar

Calendar Views

- The calendar application retrieves data from the phone's calendar application, hence it is important to have the Google sync account configured. If you have problems doing this, check the standard phone calendar application's settings for sync options.
- Opening the calendar application lists the items in Agenda view.
- Use the quick menu to change to different views such as week, month, day etc.
- Use the previous (bottom left) and next (bottom right) buttons in the agenda view to view previous or next day.
- Touch and explore the screen to learn about different views.
- You can use slides or arrow keys to navigate in the grid of week or month views.

Creating an Entry

- Use the new event option from the quick menu to create a new entry in the calendar application.
- Checking the all day in new entry window will hide the time controls.
- Make sure to select a calendar using the calendar combo box.

22. Where am I

This application gives GPS location information. To work correctly, it is important to have GPS turned on and to have an active internet connection over Wi-Fi or cellular network. Touch and explore the screen to read information such as connection status (top of screen), current address (middle of screen) and latitude information (bottom of screen).

Settings

- Quick Menu > System Location Settings: open the location settings of the phone for using GPS and Wi-Fi for location tracking.
- Quick Menu > Settings > Speak Connection Status: enable the speaking of connection status automatically.
- Quick Menu > Settings > Speak Location Automatically: enable the speaking of location information automatically.
- Quick Menu > Settings > Show Coordinates: enable the display of latitude information at the bottom of the screen.

23. Apps

- When the apps window is opened, a list of all the applications installed on the phone is displayed. Note that it may take some time to load the list as it requires collection of information.
- You can use first letter navigation to find applications and can double tap or enter to open them.
- To uninstall an application, select it in the list and use the quick menu > Uninstall option.

24. Contacting Code Factory and Submitting Issues via the Help Desk

- Submit a help desk ticket at http://www.codefactory.cat/helpdesk/index.php?a=add and view your submitted tickets at http://www.codefactory.cat/helpdesk/ticket.php
- You can use the quick menu from the MA window and select Support > Get help to view the Code Factory Help Desk.
- Write to sales@codefactory.es for sales related issues.

25. Reading the Manual

Use the quick menu from the MA window and select Support > Read Manual online to open the MA user manual.